

REMARKS

Claims 1, 2 and 5-8 are pending in this application. By this Amendment, claims 1, 2 and 5 are amended. Claims 3 and 4 are canceled without prejudice to, or disclaimer of, the subject matter recited in those claims. Claims 6-8 are added. The added claims introduce no new matter, as examples of the subject matter recited in claims 6-7 are disclosed, for example, in paragraphs [0034] and [0054] of the Specification. New claim 8 is an apparatus claim generally corresponding to method claim 1. Reconsideration based on the above amendments and the following remarks is respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Knable in the June 16, 2004 telephone interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

The Office Action, in paragraph 1, rejects claims 2 and 4 under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed.

The Office Action states that the references to a "high-temperature fluid" in claim 2 and a "low-temperature fluid" in claim 4 do not adequately provide any relationship by which the scope of protection of these claims can be readily ascertained.

Although Applicants have canceled claim 4, the subject matter of that claim is incorporated into amended independent claim 1. Applicants respectfully submit that when read in light of the complete recitation in each of the claims, and in conjunction with the features of the independent claims and intervening claims from which they respectively depend, the meanings of a "high-temperature liquid" and a "low-temperature liquid" can be readily ascertained. Further, when read in light of the Specification, from which terms take their meaning, for example paragraphs [0046], [0047] and [0054], the terms are definite to one skilled in the art. Specifically, in the case of claim 2, any high-temperature liquid which provides any amount of preheating of a green tire prior to transfer into a vulcanizer is covered

by the claim language as recited. This is precisely what is intended. Further, with regard to the subject matter of claim 4, as incorporated into claim 1, a low-temperature liquid is supplied into the bladder in order to accelerate cooling. Applicants respectfully submit that any temperature lower than that of the vulcanized tire as it is removed from the vulcanizer which aids in accelerating cooling is ascertainable from the language recited.

Reconsideration and withdrawal of the rejection of claim 2 and the subject matter of claim 4, as incorporated into claim 1, under 35 U.S.C. §112, second paragraph, as being indefinite are respectfully requested.

The Office Action, in paragraph 5, rejects claims 1, 2 and 5 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,620,367 to Mitamura. This rejection is respectfully traversed.

Mitamura teaches applying shaping to a green tire externally of a tire vulcanizing press using a bladder, wherein the bladder is elevated in temperature in advance by a heating gas, prior to vulcanizing and molding by the press, to apply shaping to the green tire (col. 1, line 60 - col. 2, line 1). With reference to Fig. 4, Mitamura discloses a preheating unit 30 composed of a heating heater 36 for heating the outer periphery of a green tire 6 and a gas supplying source 37 for supplying a low pressure heating gas into the bladder 20 (col. 6, lines 17-23). Applicants respectfully submit that all references to the medium introduced into the bladder during any pre-processing step disclosed in Mitamura refer to low pressure heated or unheated gases.

Claim 1 recites, among other features, supplying a liquid into the bladder to preliminarily inflate the bladder within the green tire. Claim 2 recites the liquid supplied into the bladder for preliminary inflation is a high-temperature liquid provided for preheating the green tire prior to transfer into the vulcanizer. Claim 5 recites, among other features, preliminary inflating means for supplying a liquid into a bladder ... to preliminarily inflate

the bladder within the green tire. Applicants respectfully submit that Mitamura, in all of its references to introducing a gas, via gas passages, cannot reasonably be read to include supplying a liquid into a bladder as is varyingly recited in claims 1, 2 and 5.

Additionally, independent claim 1 recites, among other features, transferring the vulcanized tire, together with the holders and the bladder, from the vulcanizer to a post-cure inflator, and attaching said holders to a rotary shaft of said post-cure inflator; rotating the rotary shaft of the post-cure inflator to thereby cool the vulcanized tire; and accelerating cooling of the vulcanized tire, by supplying a low-temperature liquid into the bladder. Independent claim 5 additionally recites, among other features, means for heating and/or cooling the liquid as the liquid is circulated through the bladder. Mitamura fails to disclose the concept of post-cure inflation, as recited in independent claim 1, or means for heating and/or cooling the liquid as the liquid is circulated through the bladder, as recited in independent claim 5. Further, dependent claim 2 includes all of the features recited in independent claim 1. For at least these reasons, Applicants respectfully submit that the combination of features recited in claims 1, 2 and 5 are not anticipated by Mitamura. Also, Applicants respectfully submit that the combination of features recited in these claims would not have been obvious to one of ordinary skill in the art based on the teachings of Mitamura.

Additionally, Applicants respectfully submit that in order to sustain a rejection under 35 U.S.C. §102, referring to MPEP §2131, the standard is met "only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." Further, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." Applicants therefore respectfully submit that, for a rejection under 35 U.S.C. §102(e), it is not enough that the reference merely "is considered to suggest a method and apparatus that satisfies the requirements" of the rejected claims, as is stated in the Office Action.

Accordingly, reconsideration and withdrawal of the rejection to claims 1, 2 and 5 under 35 U.S.C. §102(e) as being anticipated by Mitamura are respectfully requested.

The Office Action, in paragraph 6, rejects claims 1 and 5 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over European Patent Application No. EP 578,106 to Bridgestone or U.S. Patent No. 3,909,337 to Yabe or U.S. Patent No. 2,824,336 to Weigold et al. (hereinafter "Weigold") or U.S. Patent No. 3,922,122 to Bottasso et al. (hereinafter "Bottasso"). These rejections are respectfully traversed.

Bridgestone teaches a single unit, components of which are referred to as the forming mold and a curing mold (col. 1, lines 48-49). The process taught by Bridgestone includes presenting bead portions 8 of a carcass 34 fitted to annular supports 6 and 7, which may be either unformed or already partially formed (col. 32-35 and Fig. 1). The bladder is then inserted in the carcass with the carcass then being inserted into the mold prior to feeding a pressurized fluid into the bladder (col. 3, lines 42-54).

Yabe teaches a green tire shaping apparatus which makes it easy to subject the shaped green tire to the vulcanizing process (col. 1, lines 35-38). In Yabe, the shaping step includes supplying pressurized fluid to the shaping bag which is then hermetically sealed to form a chamber so as to completely prevent the fluid in the formed chamber from leaking (col. 5, lines 35-55).

Weigold teaches an apparatus for shaping pneumatic tires from flat band form to a doughnut-shaped or toroidal form (col. 1, lines 16-18). The process disclosed in Weigold includes admitting fluid under pressure to the interior of the curing bag 14 during the shaping operation (col. 3, lines 27-29).

Bottasso discloses an apparatus for molding an embossed pattern on the peripheral band of a toroidal article, particularly on the tread of a tire, using a mold (Abstract).

Applicants respectfully submit that none of the applied references discloses, or even suggests, the post-curing inflation concept as is recited, among other features, in independent claim 1, or means for heating and/or cooling the liquid as the liquid is circulated through the bladder, as is recited , among other features, in independent claim 5. Additionally, with respect to claim 1, there is no disclosure which suggests that such post-curing inflation may be performed by cooling the cured tire with the bladders inflated, so as to improve the productivity associated with shaping of the cured tire and also improve uniformity of the finally-manufactured tire.

Accordingly, reconsideration and withdrawal of the rejections to claims 1 and 5 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over any of the individually applied references are respectfully requested.

The Office Action, in paragraph 7, rejects claim 2 under 35 U.S.C. §103(a) as being unpatentable over Bridgestone or Yabe or Weigold or Bottasso as applied to claim 1 above, and further in view of Mitamura. This rejection is respectfully traversed.

Mitamura fails to overcome the above-noted deficiencies of the other references with respect to claim 1. Accordingly, claim 2 is allowable for its dependence on claim 1.

Additionally, Applicants respectfully submit that the teaching of Mitamura, wherein the bladder is elevated in temperature in advance by heating gas, prior to vulcanizing and molding by the press, to apply shaping to the green tire, neither teaches nor suggests the use of a preheating liquid as is recited in claim 2.

Accordingly, reconsideration and withdrawal of the rejection of claim 2 under 35 U.S.C. §103(a) as being unpatentable over the combination of the applied references are respectfully requested.

The Office Action, in paragraph 8, rejects claim 3 under 35 U.S.C. §103(a) as being unpatentable over Bridgestone as applied to claim 1 and further in view of U.S. Patent No.

3,621,520 to Ulm and/or U.S. Patent No. 2,963,737 to Soderquist. This rejection is respectfully traversed.

The cancellation of claim 3 makes this rejection moot except insofar as the inclusion of the feature from the now canceled claim 3 is now incorporated into independent claim 1 and, as such, this rejection may be construed to affect the patentability of claim 1. Although Ulm is directed to a post-cure inflator and Soderquist directed to a machine for tire manufacture (post inflation), neither of these references suggests transferring the vulcanized tire, together with the holders and the bladder, from the vulcanizer to a post-cure inflator, and attaching said holders to a rotary shaft of said post-cure inflator. Consideration of this argument as it may affect the subject matter of claim 1 is respectfully requested.

The Office Action, in paragraph 9, rejects claim 4 under 35 U.S.C. §103(a) as being unpatentable over Bridgestone as applied to claim 1 above, and further in view of Ulm and/or Soderquist as applied to claim 3 above, and further in view of European Patent No. EP 468,343 to Bridgestone (hereinafter "EP '343"). This rejection is respectfully traversed.

The cancellation of claim 4 makes this rejection moot except insofar as the inclusion of the feature from the non cancelled claim 4 is incorporated into independent claim 1 and the rejection may be construed to affect the patentability of claim 1. The Office Action states, using EP '343 as an example, that it is known to cool the inflating air within the tire during post-cure inflation to provide faster cooling. Applicants respectfully submit that the subject matter of claim 4 as incorporated into claim 1 recites use of a low-temperature liquid to accelerate cooling, and not cooled air. Consideration of this argument with regard to the patentability of claim 1 is respectfully requested.

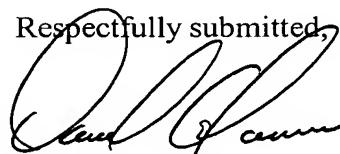
Applicants respectfully submit that for at least the reasons reviewed above, the combination of features now recited in independent claim 1 is not suggested by the combination of the applied references.

Applicants' representative presented these claim amendments and arguments to Examiner Knable in the June 16 telephone interview. The Examiner stated that the proposed claim amendments appear to distinguish the subject matter of the claims over the currently applied references.

New claims 6-7 are allowable for their dependence on claim 5, and for additional features they recited. New claim 8 is allowable for at least the reasons that claim 1 is allowable.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2 and 5-8 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number set forth below.

Respectfully submitted,

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Attachment:
Petition for Extension of Time

Date: June 21, 2004

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